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aaatgttaaa atggtaaaaag ttatcgatcc aagaacattt caccgtttac tagttaatat 3180  
□

acctctacct acgtagtaaa aaaattttaa gaaattattc ccaaaagcca gttgtacatt 3240  
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ctctcaattt atgattaatc tacagattaa gttaattatg caagtatgac ttgtacataa 3300  
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aaattagggtt tcgcttaata tcagaaaaaa aaacttcaag catcaattta ctagcatgat 3360  
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□

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□

<213> Schizosaccharomyces pombe

□

□

<400> 44

□

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□  
aaatccggta aaacctcagt cttccaacgt agtaccagga acaagtcata taggatcgat 180  
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caaatctccg gcggattacg tttttggtga cattatagga gatggatcat tctcaaaggt 240  
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accttcgatt actgacgaat aagttgtcta atattcgtta ggtgagaaga gcaactgata 360  
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ataagggttaa gtatgtgaat atagagagag attctatgat gagacttaat gggtttcctg 480  
□  
gtatctctcg tcttttccat acatttcagg atgattttaa actttattat gtgcttgaac 540  
□  
ttgcacccaa tgggtgaactt ttgcaataca tcaaaaaggt atattttttc attagtctat 600  
□  
tcatttttcc tttattaact aagctttggg agtatcgttt tcttgatgag aattgtgtgc 660  
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gcttttatgc tgctgagatt ttatcaagta tcgagtatat gcactcctgc ggtataattc 720  
□  
acagagatct caagccagaa aagtatgttt gagtagtggt cattaaatgt tcgtttcctt 780  
□  
ttcctaattc taacctattt tttagcattt tatttgatgg aaatatgcat gtaaaaatta 840  
□  
ccgatttcgg cacagccaaa atcctacccc ctaaatatgt aaatagccct gattacacta 900  
□  
cctttccaag ctcttttggt ggcactgcgg aatatgttgc tcctgaacta ttgtctagac 960  
□  
aagttgtttc aaaatcgtaa gaaaacctat tatcccagtc tatttttttt ctgacaaata 1020  
□  
tttaagttcc gatttatggg cttttgcgtg tgttgtttat caaatgattg ttggttcccc 1080  
□  
tccttttcat ggcagcaatc ctaataatat tttcaaaaag ataatgagcc tggaatatga 1140  
□

gcttccaaag ctcttaccac ctgatatcgt tcctttgttt agccatcttt tccgtattca 1200  
gcatctgat cgatctacaa cccaacaaat aaaacaattt cctttttttg ctactattac 1260  
ttgggacaat ttatggactc aagatcctcc tcctatgcag tcattccggc ctaattataa 1320  
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<213> Saccharomyces cerevisiae

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35 40 45  
Arg Ser Ser Leu Asp Arg Lys Gly Thr Ile Asn Pro Ser Asn Ser Ser  
50 55 60  
Val Val Pro Val Arg Val Ser Tyr Asp Ala Ser Ser Ser Thr Ser Thr  
65 70 75 80



[illegible]

Arg Val Asp Cys Pro Phe Ile Val Pro Leu Lys Phe Ser Phe Gln Ser  
 □  
                   405                  410                  415  
 □  
 □  
 Pro Glu Lys Leu Tyr Phe Val Leu Ala Phe Ile Asn Gly Gly Glu Leu  
 □  
                   420                  425                  430  
 □  
 □  
 Phe Tyr His Leu Gln Lys Glu Gly Arg Phe Asp Leu Ser Arg Ala Arg  
 □  
           435                  440                  445  
 □  
 □  
 Phe Tyr Thr Ala Glu Leu Leu Cys Ala Leu Asp Asn Leu His Lys Leu  
 □  
   450                  455                  460  
 □  
 □  
 Asp Val Val Tyr Arg Asp Leu Lys Pro Glu Asn Ile Leu Leu Asp Tyr  
 □  
 465                  470                  475                  480  
 □  
 □  
 Gln Gly His Ile Ala Leu Cys Asp Phe Gly Leu Cys Lys Leu Asn Met  
 □  
                   485                  490                  495  
 □  
 □  
 Lys Asp Asp Asp Lys Thr Asp Thr Phe Cys Gly Thr Pro Glu Tyr Leu  
 □  
                   500                  505                  510  
 □  
 □  
 Ala Pro Glu Leu Leu Leu Gly Leu Gly Tyr Thr Lys Ala Val Asp Trp  
 □  
           515                  520                  525  
 □  
 □  
 Trp Thr Leu Gly Val Leu Leu Tyr Glu Met Leu Thr Gly Leu Pro Pro  
 □  
   530                  535                  540  
 □  
 □  
 Tyr Tyr Asp Glu Asp Val Pro Lys Met Tyr Lys Lys Ile Leu Gln Glu  
 □  
 545                  550                  555                  560  
 □  
 □

Pro Leu Val Phe Pro Asp Gly Phe Asp Arg Asp Ala Lys Asp Leu Leu

□

565

570

575

□

□

Ile Gly Leu Leu Ser Arg Asp Pro Thr Arg Arg Leu Gly Tyr Asn Gly

□

580

585

590

□

□

Ala Asp Glu Ile Arg Asn His Pro Phe Phe Ser Gln Leu Ser Trp Lys

□

595

600

605

□

□

Arg Leu Leu Met Lys Gly Tyr Ile Pro Pro Tyr Lys Pro Ala Val Ser

□

610

615

620

□

□

Asn Ser Met Asp Thr Ser Asn Phe Asp Glu Glu Phe Thr Arg Glu Lys

□

625

630

635

640

□

□

Pro Ile Asp Ser Val Val Asp Glu Tyr Leu Ser Glu Ser Val Gln Lys

□

645

650

655

□

□

Gln Phe Gly Gly Trp Thr Tyr Val Gly Asn Glu Gln Leu Gly Ser Ser

□

660

665

670

□

□

Met Val Gln Gly Arg Ser Ile Arg

□

675

680

□

□

□

<210> 46

□

<211> 431

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<212> PRT

□

<213> Rattus norvegicus

□

□



<400> 46

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Met Thr Val Lys Thr Glu Ala Ala Arg Ser Thr Leu Thr Tyr Ser Arg

□

1

5

10

15

□

□

Met Arg Gly Met Val Ala Ile Leu Ile Ala Phe Met Lys Gln Arg Arg

□

20

25

30

□

□

Met Gly Leu Asn Asp Phe Ile Gln Lys Leu Ala Asn Asn Ser Tyr Ala

□

35

40

45

□

□

Cys Lys His Pro Glu Val Gln Ser Tyr Leu Lys Ile Ser Gln Pro Gln

□

50

55

60

□

□

Glu Pro Glu Leu Met Asn Ala Asn Pro Ser Pro Pro Pro Ser Pro Ser

□

65

70

75

80

□

□

Gln Gln Ile Asn Leu Gly Pro Ser Ser Asn Pro His Ala Lys Pro Ser

□

85

90

95

□

□

Asp Phe His Phe Leu Lys Val Ile Gly Lys Gly Ser Phe Gly Lys Val

□

100

105

110

□

□

Leu Leu Ala Arg His Lys Ala Glu Glu Ala Phe Tyr Ala Val Lys Val

□

115

120

125

□

□

Leu Gln Lys Lys Ala Ile Leu Lys Lys Lys Glu Glu Lys His Ile Met

□

130

135

140

□

□

Ser Glu Arg Asn Val Leu Leu Lys Asn Val Lys His Pro Phe Leu Val

□

145

150

155

160

□

☐ Gly Leu His Phe Ser Phe Gln Thr Ala Asp Lys Leu Tyr Phe Val Leu  
☐ 165 170 175  
☐  
☐ Asp Tyr Ile Asn Gly Gly Glu Leu Phe Tyr His Leu Gln Arg Glu Arg  
☐ 180 185 190  
☐  
☐ Cys Phe Leu Glu Pro Arg Ala Arg Phe Tyr Ala Ala Glu Ile Ala Ser  
☐ 195 200 205  
☐  
☐ Ala Leu Gly Tyr Leu His Ser Leu Asn Ile Val Tyr Arg Asp Leu Lys  
☐ 210 215 220  
☐  
☐ Pro Glu Asn Ile Leu Leu Asp Ser Gln Gly His Ile Val Leu Thr Asp  
☐ 225 230 235 240  
☐  
☐ Phe Gly Leu Cys Lys Glu Asn Ile Glu His Asn Gly Thr Thr Ser Thr  
☐ 245 250 255  
☐  
☐ Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val Leu His Lys Gln  
☐ 260 265 270  
☐  
☐ Pro Tyr Asp Arg Thr Val Asp Trp Trp Cys Leu Gly Ala Val Leu Tyr  
☐ 275 280 285  
☐  
☐ Glu Met Leu Tyr Gly Leu Pro Pro Phe Tyr Ser Arg Asn Thr Ala Glu  
☐ 290 295 300  
☐  
☐ Met Tyr Asp Asn Ile Leu Asn Lys Pro Leu Gln Leu Lys Pro Asn Ile  
☐ 305 310 315 320  
☐

	165	170	175
□			
□			
□	Leu Gln Lys Leu Asn Gly Thr Lys Gly Ile Phe Lys Leu Phe Phe Thr		
□			
	180	185	190
□			
□			
□	Phe Gln Asp Glu Ala Ser Leu Tyr Phe Leu Leu Glu Tyr Ala Pro His		
□			
	195	200	205
□			
□			
□	Gly Asp Phe Leu Gly Leu Ile Lys Lys Tyr Gly Ser Leu Asn Glu Thr		
□			
	210	215	220
□			
□			
□	Cys Ala Arg Tyr Tyr Ala Ser Gln Ile Ile Asp Ala Val Asp Ser Leu		
□			
225		230	235
□			
□			
□	His Asn Ile Gly Ile Ile His Arg Asp Ile Lys Pro Glu Asn Ile Leu		
□			
	245	250	255
□			
□			
□	Leu Asp Lys Asn Met Lys Val Lys Leu Thr Asp Phe Gly Thr Ala Lys		
□			
	260	265	270
□			
□			
□	Ile Leu Pro Glu Glu Pro Ser Asn Thr Ala Asp Gly Lys Pro Tyr Phe		
□			
	275	280	285
□			
□			
□	Asp Leu Tyr Ala Lys Ser Lys Ser Phe Val Gly Thr Ala Glu Tyr Val		
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	290	295	300
□			
□			
□	Ser Pro Glu Leu Leu Asn Asp Asn Tyr Thr Asp Ser Arg Cys Asp Ile		
□			
305		310	315
□			
□			
□	Trp Ala Phe Gly Cys Ile Leu Tyr Gln Met Leu Ala Gly Lys Pro Pro		
□			

	325	330	335
□			
□			
□	Phe Lys Ala Ala Asn Glu Tyr Leu Thr Phe Gln Lys Val Met Lys Ile		
□	340	345	350
□			
□			
□	Gln Tyr Ala Phe Thr Ala Gly Phe Pro Gln Ile Val Lys Asp Leu Val		
□	355	360	365
□			
□			
□	Lys Lys Leu Leu Val Arg Asp Pro Asn Asp Arg Leu Thr Ile Lys Gln		
□	370	375	380
□			
□			
□	Ile Lys Ala His Leu Phe Phe His Glu Val Asn Phe Glu Asp Gly Ser		
□	385	390	395
□			400
□			
□	Val Trp Asp Asp Asn Pro Pro Glu Ile Gln Pro Tyr Lys Ile Asn Ala		
□	405	410	415
□			
□			
□	Glu Ala Met Lys Pro Leu Gln Lys Val Ser Glu Ser Asp Thr Thr Val		
□	420	425	430
□			
□			
□	Lys Met Ala Asn Leu Gln Leu Ala Gly Asn Gly His Ala Asp Thr Pro		
□	435	440	445
□			
□			
□	Leu Gln Ala Pro Ala Ala Thr Ser Gln Glu His Ser Val Ile Ser Met		
□	450	455	460
□			
□			
□	Thr Ala Ala Thr Ala Ala Phe Asn Lys Asp Tyr Thr Ser Gln Pro Lys		
□	465	470	475
□			480
□			
□			
□	Leu Gly Ser Lys Ser Ser Thr Ser Val Arg Ser Ala Ser Asn Asn Thr		
□			

	485	490	495
□			
□			
Asp Arg Glu Val Ile Gln Lys Lys Val Ser Lys Asn Arg Ala Ser Val			
□			
	500	505	510
□			
□			
Ser Ser Pro Ser Ile Ser Thr Thr Ser Arg Gly Lys Asp Asn Arg Ser			
□			
	515	520	525
□			
□			
Arg Ser Ser Asp Ala Phe Trp Ser Arg Tyr Leu Gln Asn Met Asp Glu			
□			
	530	535	540
□			
□			
Arg Val Leu Leu Met Lys Glu Val Ala Leu Ser Thr Arg Asn Leu Glu			
□			
545	550	555	560
□			
□			
Asp Ser Pro Val Gly Leu Glu Asn Val Ala Leu Asp Tyr Lys Asn Pro			
□			
	565	570	575
□			
□			
Leu Asp Ile Glu Pro Pro Thr Asp Ser Ala Gly Lys Phe Tyr Lys Lys			
□			
	580	585	590
□			
□			
Met Phe Leu Ile Thr Asn Leu Gly Arg Ala Leu Val Phe Val Lys Arg			
□			
	595	600	605
□			
□			
Arg Ser Leu Ser Met Trp Glu Glu Gln Glu Phe Glu Leu Gln Phe Glu			
□			
	610	615	620
□			
□			
Leu Glu Leu Asn Asp Val Glu Lys Ile Arg Phe Ile Ser Asp Gln Val			
□			
625	630	635	640
□			
□			
Leu Glu Ile Asp Gly Ser Arg Thr Ile Phe Ile Gly Cys Lys Glu Arg			
□			

	645	650	655
Ala Val Leu Met Lys Leu Trp Lys Leu Ile His Asn Gly Met Thr Ala			
660	665	670	
Lys Pro Lys Val Val Ser Pro Lys Ser Asp His Lys Met Phe Asp Lys			
675	680	685	
Phe Ile Leu Gln Lys Arg Gln Asn Thr Lys Lys Lys Asn Gln Ala Pro			
690	695	700	
Pro Val Pro Gln Ser Asn Arg Leu Ile Asn Gly Leu Pro Asp Arg Cys			
705	710	715	720
Ile Leu Lys Thr Pro Glu Glu Gly Ala Leu His Thr Lys Arg Pro Thr			
725	730	735	
Ser Leu Gln Thr Arg Ser Ser Ser Asn Tyr Ser Lys Leu Leu Ala Arg			
740	745	750	
Ser Thr Gln Met Arg Lys Asn Met Thr Arg Thr Asp Glu Lys			
755	760	765	
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<211> 592			
<212> PRT			
<213> Schizosaccharomyces pombe			
<400> 48			

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☐  
☐  
 Glu Asn Asp Thr Gln Ser Glu Ser Asp Leu Ser Phe Asp His Gly Ser  
☐ 20 25 30  
☐  
☐  
 Ser Glu Lys Leu Asn Arg Ala Ser Leu Pro Lys Thr Gln Asn Ser Ala  
☐ 35 40 45  
☐  
☐  
 Ile Pro Gln Ser Asn Ala Leu Asn Thr Thr Pro Asn Glu Ser Thr Ser  
☐ 50 55 60  
☐  
☐  
 Gln Ile Asp Ser Ser Pro Lys Ile Pro Ser Ala Val Pro His Ile Ser  
☐ 65 70 75 80  
☐  
☐  
 Thr Pro Asn Pro Ser Ser Gly Ala Ser Thr Pro Asn Ile Lys Arg Val  
☐ 85 90 95  
☐  
☐  
 Ser Asp Phe Lys Phe Gly Glu Ile Leu Gly Glu Gly Ser Tyr Ser Thr  
☐ 100 105 110  
☐  
☐  
 Val Leu Thr Ala Thr Glu Asn Ser Thr Lys Arg Glu Tyr Ala Ile Lys  
☐ 115 120 125  
☐  
☐  
 Val Leu Asp Lys Arg His Ile Ile Lys Glu Lys Lys Glu Lys Tyr Val  
☐ 130 135 140  
☐  
☐  
 Asn Ile Glu Lys Glu Ala Leu Cys Ile Leu Ser Lys His Pro Gly Phe  
☐ 145 150 155 160  
☐  
☐

Ile	Lys	Leu	Phe	Tyr	Thr	Phe	Gln	Asp	Ala	His	Asn	Leu	Tyr	Phe	Val
				165					170					175	
Leu	Ser	Leu	Ala	Arg	Asn	Gly	Glu	Leu	Leu	Asp	Tyr	Ile	Asn	Lys	Leu
			180					185					190		
Gly	Arg	Phe	Asn	Glu	Ile	Cys	Ala	Gln	Tyr	Tyr	Ala	Ala	Leu	Ile	Val
		195					200					205			
Asp	Ser	Ile	Asp	Tyr	Met	His	Gly	Arg	Gly	Val	Ile	His	Arg	Asp	Leu
	210					215					220				
Lys	Pro	Glu	Asn	Ile	Leu	Leu	Asp	Asp	Asn	Met	Arg	Thr	Lys	Ile	Thr
	225				230					235					240
Asp	Phe	Gly	Ser	Ala	Lys	Ile	Leu	Asn	Ser	Ser	His	Gly	Ser	His	Glu
			245						250					255	
Glu	Asp	Thr	His	His	Ala	Asp	Lys	Pro	Gln	Ala	His	Ser	Arg	Ser	Phe
			260					265					270		
Val	Gly	Thr	Ala	Arg	Tyr	Val	Ser	Pro	Glu	Val	Leu	Ser	Asp	Lys	Ile
		275					280					285			
Ala	Gly	Thr	Ala	Ser	Asp	Ile	Trp	Ala	Phe	Gly	Cys	Ile	Leu	Phe	Gln
	290					295					300				
Met	Leu	Ala	Gly	Lys	Pro	Pro	Phe	Val	Ala	Gly	Asn	Glu	Tyr	Leu	Thr
	305				310					315					320



Phe Gln Ser Ile Leu His Leu Ser Tyr Glu Ile Pro Pro Asp Ile Ser  
□  
325 330 335  
□  
□  
Asp Val Ala Ser Asp Leu Ile Lys Lys Leu Leu Val Leu Asp Pro Lys  
□  
340 345 350  
□  
□  
Asp Arg Leu Thr Val Asp Glu Ile His Gln His Pro Phe Phe Asn Gly  
□  
355 360 365  
□  
□  
Ile Lys Phe Asp Asn Thr Leu Trp Glu Leu Pro Pro Pro Arg Leu Lys  
□  
370 375 380  
□  
□  
Pro Phe Gly His Thr Ser Val Leu Ser Leu Ser Val Pro Asn Ala Ser  
□  
385 390 395 400  
□  
□  
Asn Lys His Glu Asn Gly Asp Leu Thr Ser Pro Leu Gly Val Pro Ser  
□  
405 410 415  
□  
□  
Met Val Ser Ala Ser Thr Asn Ala Ala Pro Ser Pro Val Gly Thr Phe  
□  
420 425 430  
□  
□  
Asn Arg Gly Thr Leu Leu Pro Cys Gln Ser Asn Leu Glu Glu Glu Asn  
□  
435 440 445  
□  
□  
Lys Glu Trp Ser Ser Ile Leu Gln Asp Asp Glu Lys Ile Ser Lys Ile  
□  
450 455 460  
□  
□  
Gly Thr Leu Asn Val Tyr Ser Met Ser Gly Ile Asn Gly Asn Asp Ala  
□  
465 470 475 480  
□  
□



<400> 49

Met Asp Leu Glu His Lys Arg Ile Ser Arg Ser Thr Leu Pro Asp Tyr

1 5 10 15

Ala Asp Pro Asp Tyr Phe Glu Ala Arg Gly Glu Arg Asn Pro Val Lys

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Pro Gln Ser Ser Asn Val Val Pro Gly Thr Ser His Ile Gly Ser Ile

35 40 45

Lys Ser Pro Ala Asp Tyr Val Phe Gly Asp Ile Ile Gly Asp Gly Ser

50 55 60

Phe Ser Lys Val Arg Arg Ala Thr Asp Lys Lys Ser Trp Lys Glu Tyr

65 70 75 80

Ala Ile Lys Val Leu Asp Lys Lys Tyr Ile Val Lys Glu Asn Lys Val

85 90 95

Lys Tyr Val Asn Ile Glu Arg Asp Ser Met Met Arg Leu Asn Gly Phe

100 105 110

Pro Gly Ile Ser Arg Leu Phe His Thr Phe Gln Asp Asp Leu Lys Leu

115 120 125

Tyr Tyr Val Leu Glu Leu Ala Pro Asn Gly Glu Leu Leu Gln Tyr Ile

130 135 140

Lys Lys Tyr Arg Phe Leu Asp Glu Asn Cys Val Arg Phe Tyr Ala Ala

145 150 155 160

☐ Glu Ile Leu Ser Ser Ile Glu Tyr Met His Ser Cys Gly Ile Ile His  
☐ 165 170 175  
☐  
☐ Arg Asp Leu Lys Pro Glu Asn Ile Leu Phe Asp Gly Asn Met His Val  
☐ 180 185 190  
☐  
☐ Lys Ile Thr Asp Phe Gly Thr Ala Lys Ile Leu Pro Pro Lys Tyr Val  
☐ 195 200 205  
☐  
☐ Asn Ser Pro Asp Tyr Thr Thr Phe Pro Ser Ser Phe Val Gly Thr Ala  
☐ 210 215 220  
☐  
☐ Glu Tyr Val Ala Pro Glu Leu Leu Ser Arg Gln Val Val Ser Lys Ser  
☐ 225 230 235 240  
☐  
☐ Ser Asp Leu Trp Ala Phe Ala Cys Val Val Tyr Gln Met Ile Val Gly  
☐ 245 250 255  
☐  
☐ Ser Pro Pro Phe His Gly Ser Asn Pro Asn Asn Ile Phe Lys Lys Ile  
☐ 260 265 270  
☐  
☐ Met Ser Leu Glu Tyr Glu Leu Pro Lys Leu Leu Pro Pro Asp Ile Val  
☐ 275 280 285  
☐  
☐ Pro Leu Phe Ser His Leu Phe Arg Ile Gln Pro Ser Asp Arg Ser Thr  
☐ 290 295 300  
☐  
☐ Thr Gln Gln Ile Lys Gln Phe Pro Phe Phe, Ala Thr Ile Thr Trp Asp  
☐ 305 310 315 320  
☐

☐ Asn Leu Trp Thr Gln Asp Pro Pro Pro Met Gln Ser Phe Arg Pro Asn

☐ 325 330 335

☐

☐ Tyr Asn Ile Ala Ile Pro Asn Ala Pro Ala Tyr Tyr Arg Ser Asn Val

☐ 340 345 350

☐

☐ Thr Ala Ala Ala Ala Ala Asn Ala Ala Ala Ala Phe Ala Ser Ala Ser

☐ 355 360 365

☐

☐ Ile Val Lys His Gln Glu Thr Ala Arg Arg Gln Glu Leu Pro Thr Val

☐ 370 375 380

☐

☐ Asn Arg Phe Thr Ala Pro Thr Ala His Tyr Gly Tyr Ala Ser Leu Arg

☐ 385 390 395 400

☐

☐ Ser His Gln Met Pro Val Asp Arg Leu Tyr Tyr Lys Leu Val Pro Ser

☐ 405 410 415

☐

☐ Ser Glu Ser Ile

☐ 420

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☐

☐ <210> 50

☐ <211> 491

☐ <212> PRT

☐ <213> Unknown

☐

☐ <220>

☐ <223> Description of Unknown Organism:plant

☐

☐ <400> 50  
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☐  
☐ Asn Ser Ser Asn Gly Ala Asn Val Ser Arg Ser Lys Ser Phe Ser Phe  
☐ 20 25 30  
☐  
☐ Lys Ala Pro Gln Glu Asn Phe Thr Ser His Asp Phe Glu Phe Gly Lys  
☐ 35 40 45  
☐  
☐ Ile Tyr Gly Val Gly Ser Tyr Ser Lys Val Val Arg Ala Lys Lys Lys  
☐ 50 55 60  
☐  
☐ Glu Thr Gly Thr Val Tyr Ala Leu Lys Ile Met Asp Lys Lys Phe Ile  
☐ 65 70 75 80  
☐  
☐ Thr Lys Glu Asn Lys Thr Ala Tyr Val Lys Leu Glu Arg Ile Val Leu  
☐ 85 90 95  
☐  
☐ Asp Gln Leu Glu His Pro Gly Ile Ile Lys Leu Tyr Phe Thr Phe Gln  
☐ 100 105 110  
☐  
☐ Asp Thr Ser Ser Leu Tyr Met Ala Leu Glu Ser Cys Glu Gly Gly Glu  
☐ 115 120 125  
☐  
☐ Leu Phe Asp Gln Ile Thr Arg Lys Gly Arg Leu Ser Glu Asp Glu Ala  
☐ 130 135 140  
☐  
☐ Arg Phe Tyr Thr Ala Glu Val Val Asp Ala Leu Glu Tyr Ile His Ser  
☐

145	150	155	160
Met Gly Leu Ile His Arg Asp Ile Lys Pro Glu Asn Leu Leu Leu Thr			
165	170	175	
Ser Asp Gly His Ile Lys Ile Ala Asp Phe Gly Ser Val Lys Pro Met			
180	185	190	
Gln Asp Ser Gln Ile Thr Val Leu Pro Asn Ala Ala Ser Asp Asp Lys			
195	200	205	
Ala Cys Thr Phe Val Gly Thr Ala Ala Tyr Val Pro Pro Glu Val Leu			
210	215	220	
Asn Ser Ser Pro Ala Thr Phe Gly Asn Asp Leu Trp Ala Leu Gly Cys			
225	230	235	240
Thr Leu Tyr Gln Met Leu Ser Gly Thr Ser Pro Phe Lys Asp Ala Ser			
245	250	255	
Glu Trp Leu Ile Phe Gln Arg Ile Ile Ala Arg Asp Ile Lys Phe Pro			
260	265	270	
Asn His Phe Ser Glu Ala Ala Arg Asp Leu Ile Asp Arg Leu Leu Asp			
275	280	285	
Thr Glu Pro Ser Arg Arg Pro Gly Ala Gly Ser Glu Gly Tyr Val Ala			
290	295	300	
Leu Lys Arg His Pro Phe Phe Asn Gly Val Asp Trp Lys Asp Leu Arg			

305		310		315		320
[ ]						
[ ]	Ser Gln Thr Pro Pro Lys Leu Ala Pro Asp Pro Ala Ser Gln Thr Ala					
[ ]		325		330		335
[ ]						
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465	470	475	480
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□			
Trp	Lys	Lys	Ala
□	Ile	Glu	Thr
	Leu	Gln	Asn
	Arg		
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	Lys	Phe	Lys
	Leu	Gly	Arg
	Ser	Lys	Glu
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Asp	Asp	Gly	Ser
□	Ser	Glu	Asp
	Glu	Asn	Glu
	Lys	Ser	Trp
	Gly	Asn	Gly
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	20	25	30
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Leu	Phe	His	Phe
□	His	His	Gly
	Glu	Lys	His
	His	His	Asp
	Gly	Ser	Pro
	Lys		
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	35	40	45
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Asn	His	Asn	His
□	Glu	His	Glu
	His	His	Ile
	Arg	Lys	Ile
	Asn	Thr	Asn
□			
	50	55	60
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□			
Glu	Thr	Leu	Pro
□	Ser	Ser	Leu
	Ser	Ser	Pro
	Lys	Leu	Arg
	Asn	Asp	Ala
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65	70	75	80
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Ser	Phe	Lys	Asn
□	Pro	Ser	Gly
	Ile	Gly	Asn
	Asp	Asn	Ser
	Lys	Ala	Ser
□			
	85	90	95
□			
□			

Glu	Arg	Lys	Ala	Ser	Gln	Ser	Ser	Thr	Glu	Thr	Gln	Gly	Pro	Ser	Ser	
100								105					110			
Glu	Ser	Gly	Leu	Met	Thr	Val	Lys	Val	Tyr	Ser	Gly	Lys	Asp	Phe	Thr	
115							120					125				
Leu	Pro	Phe	Pro	Ile	Thr	Ser	Asn	Ser	Thr	Ile	Leu	Gln	Lys	Leu	Leu	
130							135					140				
Ser	Ser	Gly	Ile	Leu	Thr	Ser	Ser	Ser	Asn	Asp	Ala	Ser	Glu	Val	Ala	
145						150				155					160	
Ala	Ile	Met	Arg	Gln	Leu	Pro	Arg	Tyr	Lys	Arg	Val	Asp	Gln	Asp	Ser	
165									170					175		
Ala	Gly	Glu	Gly	Leu	Ile	Asp	Arg	Ala	Phe	Ala	Thr	Lys	Phe	Ile	Pro	
180								185					190			
Ser	Ser	Ile	Leu	Leu	Pro	Gly	Ser	Thr	Asn	Ser	Ser	Pro	Leu	Leu	Tyr	
195							200					205				
Phe	Thr	Ile	Glu	Phe	Asp	Asn	Ser	Ile	Thr	Thr	Ile	Ser	Pro	Asp	Met	
210							215					220				
Gly	Thr	Met	Glu	Gln	Pro	Val	Phe	Asn	Lys	Ile	Ser	Thr	Phe	Asp	Val	
225						230				235					240	
Thr	Arg	Lys	Leu	Arg	Phe	Leu	Lys	Ile	Asp	Val	Phe	Ala	Arg	Ile	Pro	
245									250					255		

Ser Leu Leu Leu Pro Ser Lys Asn Trp Gln Gln Glu Ile Gly Glu Gln  
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 260 265 270  
 □  
 □  
 Asp Glu Val Leu Lys Glu Ile Leu Lys Lys Ile Asn Thr Asn Gln Asp  
 □  
 275 280 285  
 □  
 □  
 Ile His Leu Asp Ser Phe His Leu Pro Leu Asn Leu Lys Ile Asp Ser  
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 290 295 300  
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 □  
 Ala Ala Gln Ile Arg Leu Tyr Asn His His Trp Ile Ser Leu Glu Arg  
 □  
 305 310 315 320  
 □  
 □  
 Gly Tyr Gly Lys Leu Asn Ile Thr Val Asp Tyr Lys Pro Ser Lys Asn  
 □  
 325 330 335  
 □  
 □  
 Lys Pro Leu Ser Ile Asp Asp Phe Asp Leu Leu Lys Val Ile Gly Lys  
 □  
 340 345 350  
 □  
 □  
 Gly Ser Phe Gly Lys Val Met Gln Val Arg Lys Lys Asp Thr Gln Lys  
 □  
 355 360 365  
 □  
 □  
 Ile Tyr Ala Leu Lys Ala Leu Arg Lys Ala Tyr Ile Val Ser Lys Cys  
 □  
 370 375 380  
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 □  
 Glu Val Thr His Thr Leu Ala Glu Arg Thr Val Leu Ala Arg Val Asp  
 □  
 385 390 395 400  
 □  
 □  
 Cys Pro Phe Ile Val Pro Leu Lys Phe Ser Phe Gln Ser Pro Glu Lys  
 □  
 405 410 415  
 □  
 □

☐ Leu Tyr Leu Val Leu Ala Phe Ile Asn Gly Gly Glu Leu Phe Tyr His  
☐ 420 425 430  
☐ Leu Gln His Glu Gly Arg Phe Ser Leu Ala Arg Ser Arg Phe Tyr Ile  
☐ 435 440 445  
☐ Ala Glu Leu Leu Cys Ala Leu Asp Ser Leu His Lys Leu Asp Val Ile  
☐ 450 455 460  
☐ Tyr Arg Asp Leu Lys Pro Glu Asn Ile Leu Leu Asp Tyr Gln Gly His  
☐ 465 470 475 480  
☐ Ile Ala Leu Cys Asp Phe Gly Leu Cys Lys Leu Asn Met Lys Asp Asn  
☐ 485 490 495  
☐ Asp Lys Thr Asp Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu  
☐ 500 505 510  
☐ Ile Leu Leu Gly Gln Gly Tyr Thr Lys Thr Val Asp Trp Trp Thr Leu  
☐ 515 520 525  
☐ Gly Ile Leu Leu Tyr Glu Met Met Thr Gly Leu Pro Pro Tyr Tyr Asp  
☐ 530 535 540  
☐ Glu Asn Val Pro Val Met Tyr Lys Lys Ile Leu Gln Gln Pro Leu Leu  
☐ 545 550 555 560  
☐ Phe Pro Asp Gly Phe Asp Pro Ala Ala Lys Asp Leu Leu Ile Gly Leu  
☐ 565 570 575  
☐

Leu Ser Arg Asp Pro Ser Arg Arg Leu Gly Val Asn Gly Thr Asp Glu

□

580

585

590

□

□

Ile Arg Asn His Pro Phe Phe Lys Asp Ile Ser Trp Lys Lys Leu Leu

□

595

600

605

□

□

Leu Lys Gly Tyr Ile Pro Pro Tyr Lys Pro Ile Val Lys Ser Glu Ile

□

610

615

620

□

□

Asp Thr Ala Asn Phe Asp Gln Glu Phe Thr Lys Glu Lys Pro Ile Asp

□

625

630

635

640

□

□

Ser Val Val Asp Glu Tyr Leu Ser Ala Ser Ile Gln Lys Gln Phe Gly

□

645

650

655

□

□

Gly Trp Thr Tyr Ile Gly Asp Glu Gln Leu Gly Asp Ser Pro Ser Gln

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☐

Glu

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☐

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☐

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Glu

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Gly Thr Val Thr His Thr Phe Cys Gly Thr Ile Glu Tyr Met Ala Pro

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Glu			
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Asp Ala Lys Thr Asn Thr Phe Cys Gly Thr,Pro Asp Tyr Ile Ala Pro			
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1	5	10	15
□			



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Glu  
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Asp Asp Lys Thr Asp Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro

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Glu.

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Phe Gly Gly Trp Thr Tyr Val Gly

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Glu

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